NOTES.

The Royal Society is represented in the New Year's Honours List by Dr. J. J. Dobbie, principal of the Government Laboratories, and Dr. F. W. Dyson, Astronomer Royal, each of whom has received the honour of Knighthood. Sir William MacGregor, G.C.M.G., who retired recently from the Governorship of Queensland, and whose scientific work is well known to geographers and anthropologists, has been made a Privy Councillor. Prof. J. Marnoch, regius professor of surgery, Aberdeen University, has been appointed a commander of the Royal Victorian Order (C.V.O.). Dr. J. H. Marshall, director-general of archæology in India, is among the new knights in the Indian list; while Major S. R. Christophers, officer in charge of the Malarial Bureau of the Central Research Institute, Kasauli, and Mr. Montague Hill, Chief Conservator of Forests, Central Provinces, have been appointed Companions of the Order of the Indian Empire (C.I.E.). Dr. C. A. Bentley, special officer under the Sanitary Commissioner, Bengal, has been awarded the Kaisar-i-Hind medal for public service in India.

It is highly gratifying to be able to record that the board of trustees of the University of Illinois has given the sum of five hundred dollars to the fund inaugurated for the purpose of erecting a laboratory at Rothamsted in commemoration of the centenary of the birth of Lawes in 1814 and of Gilbert in 1817. There has always been a great community of interest between the agricultural experiment stations in the United States and those in this country, and in few branches of science is there better organisation for ensuring that results obtained at any one institution shall be known at the others. Having regard to the fact that the University of Illinois includes such distinguished agricultural investigators as Dean Davenport, Prof. Cyril Hopkins, and others of wide repute, the British workers have reason to be pleased with this practical recognition of the value of the Rothamsted investigations. Although the war has automatically put an end to all attempts to collect money, the fund is now so far complete that only 100*l.* is wanted to make up the 12,000*l.* necessary to build and equip the new laboratory.

Mr. Francis H. Carr, who for sixteen years was chief of the chemical manufacturing operations of Messrs. Burroughs Wellcome and Co., at Dartford, has been appointed to Boots Pure Drug Co., Ltd., Nottingham, with a seat on the board of directors.

We regret to see the announcement of the death, at seventy-one years of age, of Lieut.-Col. D. D. Cunningham, F.R.S., honorary physician to the King, and formerly professor of physiology in the Medical College, Calcutta.

News has been received of the following French geologists and palæontologists:—Jean Boussac, wounded in the foot; Jean Cottreau, in a territorial regiment at Creuzot, well; Robert Douvillé and G. Groth, either killed or wounded; Marius Filliozat, paymaster attached to the Fourth Army Corps, well.

We learn from the *Scientific American* that the American Society of Mechanical Engineers, New York, has awarded the John Frick medal to Prof. J. E. Sweet, honorary member and past president of the society, "for his achievements in machine design and for his pioneer work in applying sound engineering principles to the construction of the high-speed steam engine."

The death is reported, in his sixty-sixth year, of Dr. Albert Charles Peale, who was a geologist in the U.S. Geological Survey from 1883 to 1898. He had since been employed in the section of palæobotany in the U.S. National Museum. In addition to contributions to scientific reports, Dr. Peale's published work consisted mainly of volumes on the mineral springs of the United States.

With the death of Mr. Thomas Bryant, on December 30, there has disappeared the last of the leading British surgeons of the Victorian period. Although in his eighty-seventh year, he still retained the erect carriage and mental vigour of his younger days. When he commenced the study of medicine at Guy's Hospital in 1846, Lister was already in his second year at University College, and the "cell-doctrine" was still in its infancy. Bryant was eminently a practical surgeon, applying himself to the various problems which confronted the surgical leaders of his time. He opened up no new field of surgical endeavour, but he brought an inquiring mind and an industrious pen to help in the general progress of his art. He retired from the surgical staff of Guy's Hospital in 1888, delivered the Hunterian oration in 1893 (having H.M. King Edward VII. in his audience), and served as president of the Royal College of Surgeons of England from 1896 to 1899.

The death is announced of Mr. Henry William Manly, actuary of the Equitable Life Assurance Society, and a distinguished member of the actuarial profession. He completed his third year's examination as an associate of the Institute of Actuaries as long ago as 1867, when he was on the actuarial staff of the London and Provincial Law Assurance Society. He became in due course a fellow, served for several years as one of the honorary secretaries, was elected vice-president, and ultimately became president of the institute in its jubilee year. In all these capacities he took a leading part in its work, contributing many papers to its journal. He was also a prominent member of the International Actuarial Congresses, being the treasurer and secretary for home correspondence of that held in London in 1898. He made the intricate subject of superannuation allowances one of his special studies, and was for that reason consulted by the Royal Commission on Civil Service Superannuation, of which Lord Courtney of Penwith was chairman. It was under Mr. Manly's advice that the new and liberal system of combining life insurance and the provision of a capital sum with the allowance for old age was finally adopted.

We regret to see that one of the pioneers of the Indian Forest Service has just passed away in his seventy-sixth year—Col. J. C. Doveton, of the Madras

Staff Corps, one of the band of military officers selected in the early years of the Department to start work in various provinces. Readers of Capt. Forsyth's charming book, now somewhat forgotten, the "Highlands of Central India," will remember that it was in 1861 that the Central Provinces became a Chief Commissionership under Sir Richard Temple, who took great interest in forestry, so that almost at once he procured the services of Capt. (now Col.) G. F. Pearson as conservator, with Capt. Forsyth and others as assistants. In 1864 they were joined by Doveton, who, on Pearson's transfer, became the conservator, and remained such until his retirement from the service in 1896. During these thirty-two years he devoted himself to the selection and demarcation of forests for permanent reservation and careful management, he studied the welfare not only of the agricultural people, but also of the half-civilised jungle tribes who lived in and near the forests, and he endeavoured to introduce systems of working suitable for supplying the huge amount of small timber and fuel required by the people, and the timbers of better quality wanted for building and railway works. His paper on the growth and cultivation of bamboo in vol. ix. of the *Indian Forester* is still one of the best on the subject. He was a good sportsman, and had a great knowledge of the wild life in the forests, the "atmosphere" of which is now so well known from the wonderful pictures of it in the "Jungle Book."

AT the instance of Mr. H. S. Wellcome, the founder of the Wellcome Bureau of Scientific Research, an Ambulance Construction Commission has been inaugurated to consider the improvement of motor ambulances and the standardisation of patterns. The list of members of the commission includes, among other well-known names, those of Sir Frederick Treves, Bart., Sir John Cowans, K.C.B., Sir Arthur May, K.C.B., Sir Alfred Keogh, K.C.B., Sir Claude Macdonald, K.C.B., and Prof. W. E. Dalby. The commission will in the first place act as a judging committee for the award of prizes of the value of 2000*l.* provided by the Wellcome Bureau of Scientific Research. These prizes are offered for the best designs of an ambulance-body which shall fit a standard pattern motor chassis for field motor-ambulances. The last day for the receipt of competing designs is June 30, 1915. It is anticipated that the competition will bring in a number of ingenious designs, from which the ideal field ambulance-body will be evolved. It is hoped that the information obtained by the competition will be published in a permanent form, available for future reference. The first prize is of one thousand pounds, the second of five hundred, and the third of three hundred pounds. All details of conditions may be obtained from the secretary, the Ambulance Construction Commission, 10 Henrietta Street, Cavendish Square, London, W. The competition is open to citizens of all nations.

RECORD rains for December were registered in London and at other places in the south and south-east of England. At Norwood the aggregate for the month was 6·74 in., the measurement being in strict agreement with the ordinary rules. The Meteorological Office record at South Kensington is said to be 6·60 in., at the Royal Botanic Society's Gardens, Regent's Park, 6·45 in., at Camden Square, 6·34 in., in the City, at Holborn Viaduct, 5·95 in., and at Wandsworth Common, 5·4 in. At Brighton and Torquay the rainfall is reported to have measured more than 9 in., and at Bournemouth 9·8 in. The wettest December previously, according to the Greenwich returns for the past 100 years, is 5·76 in. in 1876, and there are only five instances of 6 in. or more in any month at any period of the year. These abnormal falls are 1828, July, 6·43 in.; 1852, November, 6·00 in.; 1880, October, 7·65 in.; 1888, July, 6·75 in.; and 1903, June, 6·07 in. It will be seen that the rainfall, 6·75 in. in July, 1888, is similar to the amount measured last month in Norwood, and the only monthly fall actually to surpass it is 7·65 in. in October, 1880. The opening days of January have been equally wet, and generally over the metropolitan area the rainfall for the first three days of the month amounts to fully an inch, which is one-half of the usual normal fall for January. It is almost needless to say that these excessive rains are occasioning serious floods in the Thames Valley and over a large part of the country.

IN *Bulletins et Mémoires de la Société d'Anthropologie,* Paris, No. 1 for 1914, M. J. Castagné describes a series of stone monuments in Ferghana. They seem usually to take the form of cairns, and the writer is inclined to believe that they were ossuaries in which the ancient inhabitants of the mountains of Ferghana used to deposit the bones of their dead, already picked clean by dogs or other animals, as was the custom in Sogdiana up to the beginning of the seventh century.

THE seventh annual report for 1913–14 of the governors of the National Museum of Wales is a record of steady progress. The south block of the new building is under construction at a cost of about 66,000*l.*, and a welcome donation has enabled the governors to proceed with the erection of two additional galleries. Arrangements have been made for the decoration of the building with a series of appropriate sculptures. Though the present is not a good time for an appeal for public support, the governors are naturally desirous of securing funds for the completion of the building. Meanwhile numerous donations of valuable specimens have been made, and it may be hoped that the public spirit of Welshmen, aided by grants from the Treasury, will enable the governors to complete this important building, and to arrange for the display of the valuable collections already in their possession.

MR. ZAE NORTHRUP describes a bacterial disease of the "white grub," or larva of the May or June beetle (*Lachnosterna,* spp.). The organism is a micrococcus which can be isolated and cultivated, and the suggestion is made that it might be employed for the destruction of this larva, which causes considerable depredations among the crops (Technical Bull., No. 18, 1914, Michigan Agricultural College Experiment Station).

TO *Naturen* for December, 1914, Dr. A. W. Brögger contributes an illustrated article on certain swords, lance-heads, etc., recently discovered at Haldalsnosi, Hallingdal, and other Norwegian localities, and now exhibited in the Bergen Museum. Six of these weapons are shown in the illustrations to the article.

IN the report of the Clifton College Scientific Society for 1913–14 the want of interest taken on the part of members in the geological class, which had absolutely no supporters, is deplored, as is also the lack of any entries of essays or collections for the Joshua Saunders prize during 1914. The museum is undergoing rearrangement.

IN the *Times* of December 30 appeared an announcement that the London Museum possesses a tooth of a mastodon recently found in the neighbourhood of Southwark. If trustworthy, such a statement would be of great interest, seeing that, with the exception of certain specimens alleged to have come from a Derbyshire cave, mastodon remains are known in this country only from the East Anglian crags. As stated in a letter in the *Times* of January 5, if really found near Southwark, the London Museum specimen must almost certainly be a mammoth's tooth.

IN concluding his experiences of the notes of tropical birds in *Bird-Lore* for November and December, 1914, Mr. L. A. Fuertes takes occasion to record his impressions of the voice of howling-monkeys. After stating that it is not really "howling," according to his conception of that term, he observes that the cry is a hundredfold more "thunderous" and terrible than an animal not much bigger than a large cat could be imagined capable of emitting. Although the party under observation comprised only a male and a female and two half-grown young, "the terrible noise, that issued principally from the throat of the old male, seemed to make the atmosphere quake. . . . The noise was a deep, throaty, bass roar . . . fully as loud as the full-throated roaring of lions."

IN an article in *La Nacion* (Buenos Aires) of Sunday, November 22, 1914, claim is made to the discovery of definite proof of the existence of man in South America during the Miocene epoch. The claim is based on the discovery by Señor Carlos Ameghino, in a deposit in the Chapalmalal stream, on the Atlantic coast of the province of Buenos Aires, of a femur of an ancestral member of that group of ungulate mammals typified by the genus Toxodon of the Pampean, in the shaft of which is embedded part of what is regarded as a flint arrow-head. According to a figure given in the article, this presumed arrow-head is broken short off at the level of the surface of the bone; but no explanation is offered how such a feeble weapon could have penetrated the solid shaft of a bone of the type of a toxodont femur. Other traces of the presence of man are stated to have been obtained from the Chapalmalal beds, which are regarded as immeasurably older than the Pampean formation, in which occurs the so-called "*Homo pampaeus*," and if we accept the views of Señor Ameghino with regard to the embedded arrow-head, it must apparently be admitted that a human being acquainted with fire, and capable of making bows and arrows, lived with the extinct Chapalmalal fauna. Even so, however, this is very far from affording proof that man, in common with the rest of the fauna, was of Miocene age, and in existence prior to the union of South with North America.

A USEFUL contribution to ecological botany is made in the Transactions of the Botanical Society of Edinburgh (vol. xxvi., part iii.), where Miss Lamont gives an account of the ecology of the family estate of Knockdow, Argyllshire. The area of some 6000 acres is largely uncultivated land, and lies mainly on the metamorphic rocks; its overlying soil is peat, and with a flora typical of the western Highlands. On the portion of the area lying on the Old Red Sandstone a slight change in the flora is noticeable, *Galium verum, Ononis spinosa,* and *Linaria vulgaris,* for instance, only being found on the Old Red.

THE longevity of seeds is a subject on which specific information is always desirable, and the paper by G. H. Shull, on the longevity of submerged seeds in the *Plant World* (vol. xviii., November, 1914), gives some valuable information on the subject. By the bursting of a dam a lake some seventy years old was drained, and the covering of vegetation, both dense and diverse, which appeared on the dried mud in the following spring, suggested clearly that it arose chiefly from seeds which had been buried for seventy years. The paper describes a series of careful experiments to test the longevity of submerged seeds, which, though only carried on for four and a quarter years in some cases, and nearly seven years in others, show that the vitality of many seeds was fully retained at the end of these periods of time.

THE periodical flowering of the bamboo, resulting in the death of all the plants in a given area, is a well-known phenomenon. The flowering of *Bambusa polymorpha* in Burma is the subject of a communication in the *Indian Forester* for November, 1914, and it is stated that the last time this species flowered in its peculiar extensive manner was in 1859–60. Last year a few clumps flowered, and this year every clump is in full flower. It is of interest to notice that in the year before flowering no new shoots are sent up. The bamboo is regenerated from the seed ripened at these long intervals, hence all the bamboos in a large area are of the same age, and the life-cycle is repeated with regularity. When the bamboo flowers sporadically, as is the case with some species, seeds are not matured, apparently because the bamboo is self-sterile.

A USEFUL and interesting note on fruit-growing in the East Africa Protectorate is contributed to the *Kew Bulletin,* No. 8, 1914, by Mr. H. Powell, who has had about ten years of experience in this subject in various parts of the country. Following the pioneer work, extending over twenty years, by the late Rev. S. Watts, of the N'Gomeni Mission Station, who devoted much attention to establishing European fruit trees, and obtaining, by means of acclimatisation and selection, varieties best suited to the climatic conditions of East Africa, the importance of fruit culture was recognised, and ever since the founding of the Department of Agriculture in 1903 the introduction, cultivation, and distribution of improved varieties of tropical fruit plants have been actively carried on at two experimental stations, while similar attention is being given to temperate and subtropical fruits at a third station. Detailed notes are given regarding a considerable number of fruits and vegetables which have been found to thrive well in different parts of the Protectorate.

The remarkable character of the South African flora is emphasised by Dr. R. Marloth in his recently delivered presidential address before the South African Association for the Advancement of Science, at the meeting held at Kimberley. It is also of interest to note that Dr. Marloth was this year the recipient of the South Africa medal and grant for research, founded by members of the British Association in commemoration of their visit to South Africa in 1905. The adaptation of the vegetative organs of plants to their environment occupies part of the address, and some of the most striking examples are furnished by several species of Mesembryanthemum, Anacampseros, and Crassula. *M. bolusii* and *M. simulans* exactly resemble the singular stones among which they grow, both in shape, colour, and texture. The examples grown at Kew show how stone-like these and other species may be even when grown under glass. The papery-white *Anacampseros papyracea,* which grows among white quartz, is one of the most difficult of plants to detect in its native habitats. *Mesembryanthemum calcareum,* which grows in a lime-tufa region, has the surface of the leaves roughened, exactly resembling the limestone among which it occurs. The colours of some species of Mesembryanthemum and Crassula are also found to vary in accordance with the type and colour of the soil on which they are growing. Examples of this curious mimicry or adaptation in the South African flora might be multiplied, but the explanation of the phenomena is not easy to suggest, and experiment is needed to prove whether, as Dr. Marloth suggests, the light reflected from the soil may be capable of producing a reaction in the plant.

Illustrations of the importance of magnetometric surveys in tracing iron ores are given by Mr. E. Lindeman in papers on the magnetite of Calbogie, Ontario, and on the famous Moose Mountain district, near Sellwood, in the same province (Canada Department of Mines, Mines Branch, 1914). Several detailed maps accompany the latter paper. The geological relations of the iron-bearing rocks at Moose Mountain have been described by Prof. Coleman for the Ontario Bureau of Mines ("Excursion to the Sudbury Area," Guide Book No. 7, 1913); but much remains to be done in distinguishing between the material of igneous origin and the rocks into which both granite and diorite have intruded. The possibility of a sedimentary origin for the Moose Mountain series is by no means excluded, in view of the similar bedded siliceous iron ores of South Africa; and the same may be said of the magnetite of Kiruna, which is commonly cited for comparison. The smoothly glaciated surfaces at Sellwood offer excellent opportunities for study.

To the State librarian of Hartford, Connecticut, we are indebted for a copy of the fourth volume of the Bulletins of the State Geological and Natural History Survey. It is an exceedingly bulky volume, containing half a dozen separately paged bulletins (Nos. 16 to 21), originally published at various dates from 1910 to 1913, four relating to local faunas, and two to the work of the survey. The faunistic papers include (1) the first and second parts of a guide to the insects of Connecticut, by Messrs. W. E. Britton and B. H. Walden, originally published in 1911; (2) an account of the Triassic fishes of Connecticut, prepared, with a section on the study of fossil fishes in general, by Prof. C. R. Eastman, also originally issued in 1911; (3) a survey of the echinoderms of the Connecticut coast, by Dr. W. R. Coe, originally published in 1912; and (4) a systematic list of Connecticut birds, with notes on their habits and distribution, by Messrs. J. H. Sale, L. B. Bishop, and W. P. Bliss, first issued last year. The first three of these publications are fully illustrated.

As the time is now approaching when icebergs and other forms of drifting ice will make their appearance in the North Atlantic, it may be of interest to extract a few of the main facts with reference to the behaviour of the ice in 1914 from the Monthly Meteorological Chart of that ocean for January, 1915, issued by authority of the Meteorological Committee. Icebergs were seen at Belle Isle early in January, and several in 46° N., between 46° and 49° W., with some field ice between January 17 and February 5. On June 17 a berg was passed near 51½° N. and 41° W., and on July 11 another was seen about 46½° N., 40½° W.; these were the easternmost bergs seen up to date of chart (about the middle of December). The loftiest berg of the season was passed near 42° N., 48½° W., on May 19 (estimated at 500 ft. high). On July 27, near 41° N., 67½° W., a small berg was passed; the furthest west in that year. In a very useful article on the subject by Commander Hepworth, C.B. (marine superintendent) in the "Seaman's Handbook of Meteorology," issued by the committee, he shows that icebergs and field ice reach the trade routes earlier in some years than in others; the maximum quantity may be met with as early as April and as late as August. Drifting ice may, it is stated, be observed in almost any part of the North Atlantic north of 30° N. latitude, about as far east of the 10th meridian of west longitude on the eastern side of the ocean, and about as far west as the 75th meridian on the western side, north of 35° N.

In two papers which appeared in the Bulletin of the Bureau of Standards in 1908 and 1912 Mr. W. W. Coblentz described and compared the sensitiveness of the various forms of radiomicrometers. As a result of a series of measurements he concluded that a thermopile with silver and bismuth as its elements gave promise, when used *in vacuo,* of a degree of sensitiveness about half that of a bolometer under the same conditions, while its readings were much steadier. In a further paper reprinted from the bulletin for 1914, he gives details of the methods of construction he has found most suitable for thermopiles to be used in various circumstances. He shows that the attainment of a high degree of sensitiveness is in the first instance a question of neatness of design, and that high thermo-electric power is of secondary importance. For absolute measurements, in order to make the surface receiving the radiation definite in area, he attaches to each junction a small strip of tinfoil, and has already determined the radiation constant σ for black-body radiation by means of the instrument. The result, $\sigma = 5{\cdot}61 \times 10^{-12}$ watt cm.$^{-2}$ degree^{-4}, is about 2 per cent. lower than the value generally given.

The mid-December issue of the Journal of the Institution of Electrical Engineers contained a report on the standardisation of symbols, which has been issued by the International Electrotechnical Commission. Differentiation between italics and ordinary Roman letters is not encouraged, as both appear the same in ordinary handwriting, and "Gothic" type is abandoned. Of course, for the greater part, the old and generally accepted symbols are adhered to, but there are some notable exceptions. For "work" A is recommended, W for energy, and P for power. While t is adopted for temperature, the Continental hieroglyphic which does duty for θ, but has a likeness to the fourth letter of the Greek alphabet as written here, as well as to the partial differential and the printers' reader's deletion mark, is given as a second substitute. The small Greek ω, used here for ohms, is adopted for $2\pi/T$, and in consequence the German practice of designating ohms either by O (a regular trap owing to its similarity to zero) or Ω (which is here employed for megohms) is "provisionally recommended." Other symbols adopted are I for current instead of C, which is allotted to capacity, ϵ for dielectric constant, X for reactance, Z for impedance, and S for reluctance, also a subscript m for maximum values. Arc $\sin x$ is to replace $\sin^{-1}x$, the comma or full-stop is to be used for the decimal point, and the comma is to be replaced by a white space for dividing off thousands. Finally, the commission will recommend next year that the name Siemens is to replace the old mho on the rare occasions that a unit of conductance is required.

In the current issue of *Electrical Engineering* there is an interesting article on the transmission of electric power from Sweden to Denmark across the Sound through a submarine cable which will carry current at 25,000 volts pressure. The width of the Sound at this point, namely, between Helsingborg and Elsinore, is only about 3½ miles. Power will be supplied from the network of the South Swedish Power Company, which has several water-power stations, and provision is made for a total power of 5000 kw. to be transmitted to Denmark. This will be utilised for the existing network of the North Zealand Electricity Company, and will include supply to Copenhagen. The case is a typical one for which international transmission should be useful, for, while Sweden has both water-power and cheap coal, Denmark has neither. One cable has already been laid, but it is proposed that it should only be used experimentally at first, and possibly two years may elapse before the Danish network is permanently connected up to the Swedish one. Although this will be the first instance of a submarine supply of electric light and power for industrial purposes between two countries, there have nevertheless been a few other cases of electric power transmission from one country to another. Nancy, Toul, and Verdun get part of their electric power supply from German Lorraine, or at any rate did so before the war, and there is also electric power transmission from Silesia in Germany to Austria, and from the south of Switzerland to Italy. Moreover, the Rheinfelden Works supply current both to the Swiss and German sides of the Rhine.

As mentioned in a recent article (Nature, December 3) the House of Commons' Select Committee on Patent Medicines formulated a number of recommendations as to the enactment of new legislation, and the administration of existing laws, controlling the advertisement and sale of secret remedies. We learn that a committee of the General Medical Council has had these recommendations under consideration, and completely endorses them. One of the proposals is that the administration of the law should be co-ordinated and made part of the functions of a Ministry of Public Health when such a department is created, and that in the meanwhile it should be undertaken by the Local Government Board. With reference to this proposal, the committee in its report urges the necessity for the immediate creation of a Ministry of Public Health. The report has been approved by the General Medical Council.

The publication of the new British Pharmacopœia will be followed closely by several books based upon the information contained in the official work. Three of such to be issued by Messrs. J. and A. Churchill early this year are:—"Materia Medica," fourteenth edition, by Dr. W. Hale White; "The Book of Prescriptions," tenth edition, by Mr. E. W. Lucas; and "The Book of Pharmacopœias," by Mr. E. W. Lucas and Mr. H. B. Stevens, this being a new book containing about 5000 formulas, British and foreign, arranged on a comparative system.

Mr. H. K. Lewis, 136 Gower Street, W.C., announces that the new edition—the sixteenth—of "The Extra Pharmacopœia," by W. H. Martindale and W. W. Westcott, will be published in the course of a week or two. The work will be issued in two volumes, as on the last occasion, and will embody much new matter as well as the necessary revision to bring it into conformity with the new British Pharmacopœia.

OUR ASTRONOMICAL COLUMN.

Bright Meteors of December 29 and 31.—Mr. W. F. Denning reports that fine meteors were observed by Mrs. Wilson at Bexley Heath on December 29, 6h. 59m., and December 31, 11h. 14m. The former was twice as brilliant as Jupiter, and its path was from $94^\circ+43^\circ$ to $91\frac{1}{2}^\circ+24\frac{1}{2}^\circ$. It was also observed at Bristol and at Essex. The radiant was at $261^\circ+61^\circ$, and height of the meteor sixty-seven to forty-six miles, path forty-four miles, and velocity eighteen miles per sec. The meteor of December 31 was a fireball